

ABSTRACT

A gas mixture 2 containing a fuel, water and air is
5 supplied to one end of a reforming room 6, and a reformed
gas 4 containing hydrogen is discharged from the other end
thereof. Two or more such reforming units are connected in
series, and the upstream part of each reforming room is
filled with a first catalyst 8a which catalyzes a partial
10 oxidation reaction in an oxygen-rich environment, and the
downstream part is filled with a second catalyst 8b which
performs the reforming reaction. The gas mixture 102 which
has been heated in a heating unit 104 passes through a
distribution tube 108 and is distributed evenly to the
15 reforming units 114. The reforming room is composed of a
reforming tube 130 in which a reforming catalyst 112 is
charged, or two or more such reforming tubes, parallel to
each other. After being reformed the high-temperature
reformed gas 118 is passed around the reforming tubes, and
20 fed back to a manifold 116.